DOCUMENT RESUME

ED 323 919 IR 014 542

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TITLE Curriculum Development System for Navy Technical Training.
PUB DATE Feb 90
NOTE 24p.; In: Proceedings of Selected Paper Presentations at the Convention of the Association for Educational Communications and Technology; see IR 014 535.
PUB TYPE Guides - General (050) -- Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Administration; Audiovisual Aids; Curriculum Development; Guidelines; *Instructional Development; *Instructional Material Evaluation; Management Information Systems; *Material Development; Postsecondary Education; *Technical Education
IDENTIFIERS *Navy

ABSTRACT

Documentation for the U.S. Navy's curriculum development system is brought together in this paper, beginning with a description of the Naval Technical Training System. This description includes the Navy Training Plan (NTP) process, which is the current mechanism for introducing new courses; the organization and administration of the system; the long range development process; and the five stages of the Training Materials Development System (TMDS). Additional materials include: (1) an outline of the TMDS; (2) a summary of the documents required as the basis to begin stage one of the TMDS, i.e., Personnel Performance Profile Tables and the Training Path System; (3) a summary of the materials required for stage one deliverables together with document references for each item; (4) a summary of stage three materials to be delivered to the Training Agency and the references used to develop each item; (5) a trainee instruction sheet matrix; (6) an instructional media materials matrix; (7) a flow diagram for stage three curriculum development; (8) a course validation outline for stage four; (9) information on course management materials, including two computer-based management tools for the storage, retrieval, and dissemination of information; (10) an outline of the Navy Training Appraisal System; and (11) a curriculum modification matrix. (BBM)

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Curriculum Development System for Navy Technical Training

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NAVAL TECHNICAL TRAINING SYSTEM

1. The U. S. Navy is constantly engaged in technical training as technology is applied to ships at sea and warfare in general. The entrance into the Navy by young people each year requires basic technical training followed by advanced technical training as these sailors move up the ranks in their career.

2. Training requirements are derived from the need for people with particular skills in the Fleet. Skill requirements are maintained by the Chief of Naval Operations (CNO) OP-01 in the Enlisted Billet File, which lists the ratings and their associated Naval Enlisted Classification (NEC) Code. Formal courses are taught in each skill area unless enough people with that skill are already in the trained inventory or it is decided that skill may be obtained most cost effectively through on-the-job training (OJT).

3. The Navy currently provides most initial skill training via formal courses and almost all NEC training is provided by formal Class C courses. Old courses are deleted when the skill requirements become obsolete, usually through the process of introducing new technology. New courses are introduced to meet the new skill requirements resulting from the purchase of new systems or equipment.

4. The Navy Training Plan (NTP) process is the current mechanism for the introduction of new courses. This formal process is as follows: First, someone (usually a systems command) determines the need for training. They define the skills that are required to operate or maintain a new system or piece of equipment; second, this need is followed by technical program data on the system or piece of equipment in question; third, the CNO convenes a Navy Training Plan Conference attended by fleet representatives, the concerned warfare desk, OP-01, representatives of the training community and other concerned bureaus or commands; fourth, the NTP is reviewed, validated, approved and distributed; and finally, the NTP is implemented. NTPs are supposed to be developed and approved at least three years before the introduction of new equipment into the fleet.

5. The Chief of Naval Education and Training (CNET) is responsible for providing policy, direction and overall management for initial recruit and most advanced specialized training. There are within CNET three functional commands with operational responsibility for different spheres of recruit and specialized training. The Chief of Naval Technical Training (CNTECHTRA) in Memphis manages all recruit training, most initial skill and skill progression training and some functional training. The Commander, Training Command Atlantic (COMTRALANT) and Commander, Training Command Pacific (COMTRAPAC) manage a few initial skill and skill progression courses but are primarily concerned with courses of short duration which are usually operational in nature.

6. Technical training in the Navy is a responsibility of the Chief of Naval Technical Training (CNTECHTRA) located at Naval Air Station, Memphis, Tennessee. CNTECHTRA Training Program Coordinators (TPC) are responsible for all training for specific ratings or groups of ratings. They compare the desired input with the training capacity of various training facilities and identify resource problems (other than manpower) i.e., equipment or space constraints.

7. Training Facilities (TF) under CNTECHTRA teach existing formal courses as listed in the Catalog of Naval Training Courses (CANTRAC). The trainees come to the school from a variety of sources and include officers, enlisted and civilian personnel of the Navy and other military services, including those from other nations. These facilities are shown on the map below.

LONG RANGE DEVELOPMENT PROCESS

1. Introduction: The curriculum development process for Navy Technical Training begins about three years before the instruction of the course is scheduled to begin. The process is diagramed below to show the normal flow of development which may be changed to meet changing conditions in equipment or systems delivery to the Navy.

ACTION REQUIRED	Needs Assessment	PPP Table Development	TPS Development	Training Materials Development System	
ACTION TAKEN	Funding and Billets	TASK ANALYSIS	JOB ANALYSIS	Stages 1-3 PLANNING, DEVELOPMENT	Stages 4-5 VALIDATION, IMPLEMENTATION
PRODUCT PRODUCED	NAVY TRAINING PLAN-3yrs previous	PPP Table Completed	TLA Completed	Training Materials Completed - Instructor Guide - Trainee Guide/Test Materials - Instructional Media Materials	

2. The Training Materials Development System (TMDS) consists of five stages as shown below. Each stage is completed by the Materials Production Activity (MPA) which may be a Training Facility (TF) producing the materials on an in-house basis or utilizing a contract with an outside contracting production organization. The second stage, developing sample materials, is often waived when the TF or contractor has had previous satisfactory materials development experience.

FIVE STAGES OF THE TRAINING MATERIALS DEVELOPMENT SYSTEM(TMDS)

Stage 1: Plan, schedule, outline training materials

Stage 2: Develop sample training materials unless waived

Stage 3: Complete draft development of all training materials

Stage 4: Hold a pilot course for validation of training materials

Stage 5: Promulgate, distribute materials and begin surveillance

TRAINING MATERIALS DEVELOPMENT SYSTEM OUTLINE

1. Introduction. The Training Materials Development System (TMDS) is a five stage process by which curriculum developers operate, within current regulations and instructions, to provide materials for Navy training.

2. Methods of training materials development.
   a. Factory training development
   b. Contracting-out development
   c. In-house development

3. Documents utilized.
   a. Military Standard: Contract Training Programs MIL-STD-1379C (NAVY)
   b. Military Handbook: Training Materials Development DOD-HDBK 292
   c. Training Materials Acquisition and Management Plan NAVEDTRA 38004A
   d. Development, Review and Approval of New or Modified Training Curricula OPNAVINST 1550.8B
   e. Testing and the Measurement of Trainee Achievement CNTECHTRAINST 1540.38B

4. Management Participants
   a. Curriculum Control Authority (CCA)
   b. Course Curriculum Model Manager (CCMM)
   c. Training Facility (TF)
   d. Material Preparing Activity (MPA)
   e. Training Program Coordinator (TPC)
   f. Materials Change Activity (MCA)
   g. Materials Support Activity (MSA)

5. Establishment of need for course
   a. Navy Training Plan (NTP) - Factory training curriculum
   b. Training Project Plan (TPP) - Existing equipment/system

6. Process of curriculum development - five stages.
   a. Pre-development management documents - NETPMSA See page 6
      (1) Personnel Performance Profile (PPP) tables See page 7
      (2) Training Path System (TPS) components See page 8

   b. Stage 1: Scheduling and planning - deliverables See page 9
      (1) Topical Outline (TO) with Course Learning Objective (CLO)
      (2) Topic Learning Objectives (TLO)
      (3) Testing procedures
      (4) Preliminary Master Materials List (MML)
      (5) Preliminary PPP-item-to-topic objective Assignment Chart (OAC)
      (6) Curriculum materials status and development schedule
      (7) Flow chart diagram of Stage 1 See page 10

Outline (continued)

6. Process of curriculum development - five stages (continued)

c. Stage 2: Cross sectional sample of curriculum materials
(1) Section of Instructor Guide (IG)
(2) Section of Trainees Guide (TG)
(3) Sample of Instructional Media Materials (IMM)
(4) Sample Test
Note: this stage is usually waived for in-house development

d. Stage 3: Complete draft-development of curriculum - deliverables
(1) Instructor Guide (IG)
(2) Trainee Guide (TG) or seperate Instruction Sheets See page 12
(3) Instruction Media Materials (IMM) masters See pages 13-16
(4) Proctor Guides and Testing Plan
(5) Preliminary Master Schedule
(6) Flow chart diagram for Stage 3 See page 17

d. Stage 4: Pilot course validation of curriculum - components
(1) Purpose of Conducting a Pilot Course
(2) Preparing for Pilot Course Convening
(3) Pre-pilot Conference Agenda
(4) Pilot course Monitoring Team Responsibilities
(5) Conducting the Pilot Course
(6) Pilot course Final Report
(7) Flow chart diagram for Stage 4 See page 19

e. Stage 5: Authorized Curriculum Managed and Modified See page 20
(1) Promulgation, production and distribution of materials
(2) Course implementation at Training Facilities See page 20
(3) Navy training appraisal system See page 21
(4) Curriculum materials modification system See page 22

Note: The process of curriculum modification follows some of these same steps, particularly when a "Revision" of the curriculum is required.

Training Materials Development System
PRE-DEVELOPMENT MANAGEMENT DOCUMENTS REQUIRED

A. INTRODUCTION. This is a summary of the documents required as the basis to begin stage one of the Training Materials Development System (TMDS). The references utilized to develop these pre-development documents are also listed.

B. REFERENCES.

1. NAVEDTRA 38004 REV A
2. Military Standard 1379C (NAVY) with Data Item Descriptors (DID)
3. DOD Handbook 292, Parts 1 and 2
4. NETPSMA Quarterly Report

C. INFORMATION. Usually there is a Navy Training Plan. Two additional major documents are required in order to effectively develop course materials.

1. Personnel Performance Profile Tables (PPP)

a. The Personal Performance Profile is a behavior-oriented tabular listing of skills and knowledge to support a subject. A PPP table consists of a series of PPP items derived from job and task analysis.

b. Five types of PPP tables are used for the following purposes:

(1) System (made up of several sub-systems)
(2) Sub-system (made up of several related items of equipment)
(3) Equipment (including related accessory items)
(4) Task/Function (dealing with one task or function)
(5) Background (generalized academic information)

2. Training Path System (TPS)

a. The Training Path System is used by management to determine which PPP items were selected by the Subject Matter Expert (SME) to form the basis of a course and determine at what "level" of training the PPP items will be taught. Also, the relationship of the new course to all other related courses for a particular Navy Enlisted Classification (NEC) or officer training program.

b. The Training Path System consists of the following components:

(1) Training Objective Statements (TOS) which modify PPP items to indicate the level of training for each of three "task sets" representing three types of Navy personnel. Codes used indicate levels to instructors.

(2) Training Level Assignment (TLA) is a matrix showing the TOS levels selected for each PPP item previously selected.

(3) Training Path Chart (TPC) comprising three "tables":

(a) Table Assignment Matrix (TAM)
(b) Table index of PPP tables
(c) Table Assignment Chart (TAC)

3. In the event that these documents are not provided by the Curriculum Control Authority (CCA) and are not available from NETPSMA, guidance from the Training Program Coordinator at the Chief of Naval Technical Training.

4. PPP tables are developed from job analysis and task analysis efforts.

The definition of Personnel Performance Profiles (PPP) tables is as follows:

A list of knowledge and skill requirements for:

1. the operation and maintenance of a:
   a. system
   b. sub-system
   c. item of equipment,
2. performance of a task or function, or
3. generalized academic background information

5. PPP tables are used in curriculum development as the basis for:

1. the design, development and management of training, and
2. the development of these curriculum development documents:
   a. Training Path System (TPS)
      (to show how the course fits into total training)
   b. Topic Outline (TO)
      (to provide an overview of the course scope and sequence)
   c. Topic Learning Objectives (TLO)
      (to show the specific knowledge and skills to be learned)
   d. Test Items
      (to indicate methods of trainee assessment)
   e. Instructional Media Materials (IMM)
      (to provide the instructor and trainee with learning aids)

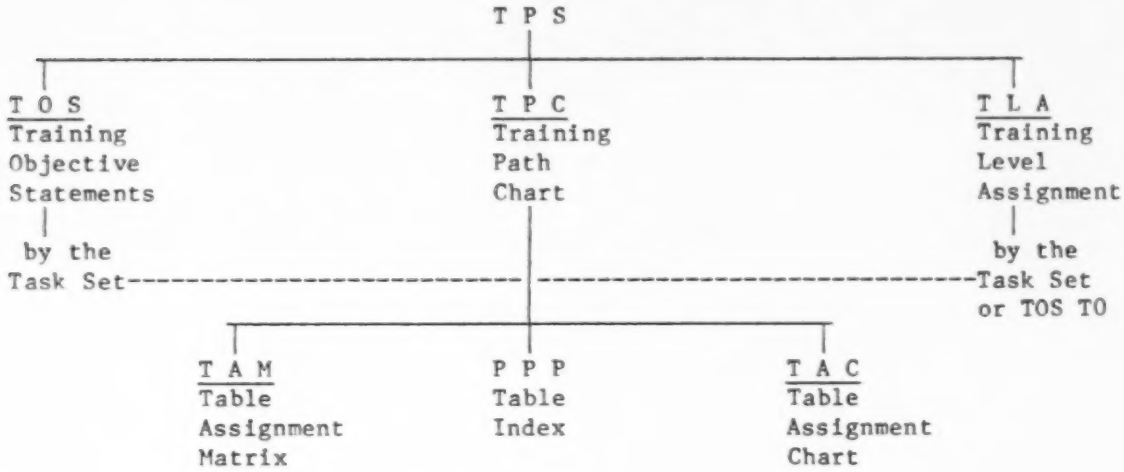
6. PPP tables for equipment, subsystems and systems are organized according to the following outline:

1 - KNOWLEDGE (THEORY) Describing the equipment, system, sub-system.
- 1-1 General Desciption
- 1-2 Physical Description
- 1-3 Functional Description
- 1-4 Interface Description
- 1-5 OPERATIONAL DESCRIPTION (directly related to skills)
- 1-6 MAINTENANCE DESCRIPTION (directly related to skills)
- 1-7 Documentation Description

2 - SKILLS (PERFORMANCE) Listing the performance to be accomplished.
- 2-1 OPERATION
- 2-2 MAINTENANCE

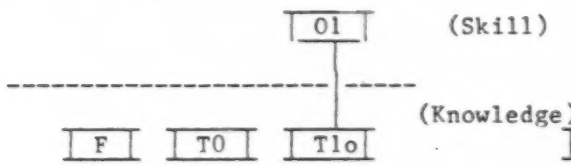
7. The Training Path System (TPS) components can be diagramed as follows:

TRAINING PATH SYSTEM (TPS) COMPONENTS

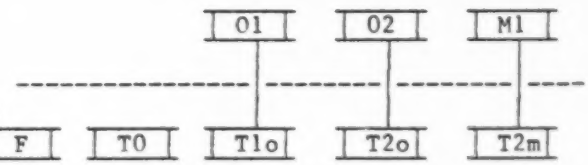


8. The three Task Sets are Coordinate, Direct and Perform and each deal with different Navy personnel. These task sets are diagramed below, using TOS codes.

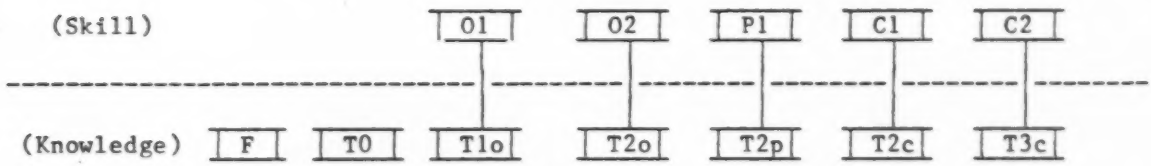
COORDINATE TASK SET (TOS Codes)
(Commanding/Executive Officers)



DIRECT TASK SET (TOS Codes)
(Officers except CO/XO)



PERFORM TASK SET (TOS Codes)
(Technicans)



Training Objective Statements (TOS) differ for each of three Task Sets. Thus the T1o (Theory level 1 for Operation) training objective statements for the Coordinate, Direct and Perform Task Sets will each be different statements.

Training Materials Development System
STAGE ONE CURRICULUM DELIVERABLES

A. INTRODUCTION. This is a summary of the materials required for stage one deliverables and provides the document references for each item.

B. REFERENCES.
1. NAVEDTRA 38004 REV A
2. Military Standards 1379C (NAVY) with Data Item Descriptors (DID)
3. DOD Handbook 292, Part 2
4. CNTECHTRAINST 1540.38B

C. INFORMATION. The basic list of stage one requirements is found in NAVEDTRA 38004 REV A, Chapter 4, paragraph 4-3.2 a through g.

1. Course Learning Objective (CLO) (included in Topical Outline)
This multiple-statement objective indicates what the trainee will be able to describe and perform when the course has been successfully completed.

2. Topical Outline (by part, section and topic)
Sequencing of the total course into sections and topics to identify the scope and flow of the material. A statement of rationale is included for each section and topic to support inclusion into the course.

3. Topic Learning Objectives (TLO)
A series of statements forming the "backbone" of the course which indicate what the trainee will describe and perform upon completion of the topic. Topic Learning Objectives are composed for three parts:
(a) Behavior - from the PPP line item
(b) Condition - from the TOS training level phrase
(c) Standard - either stated or implied to be 100%

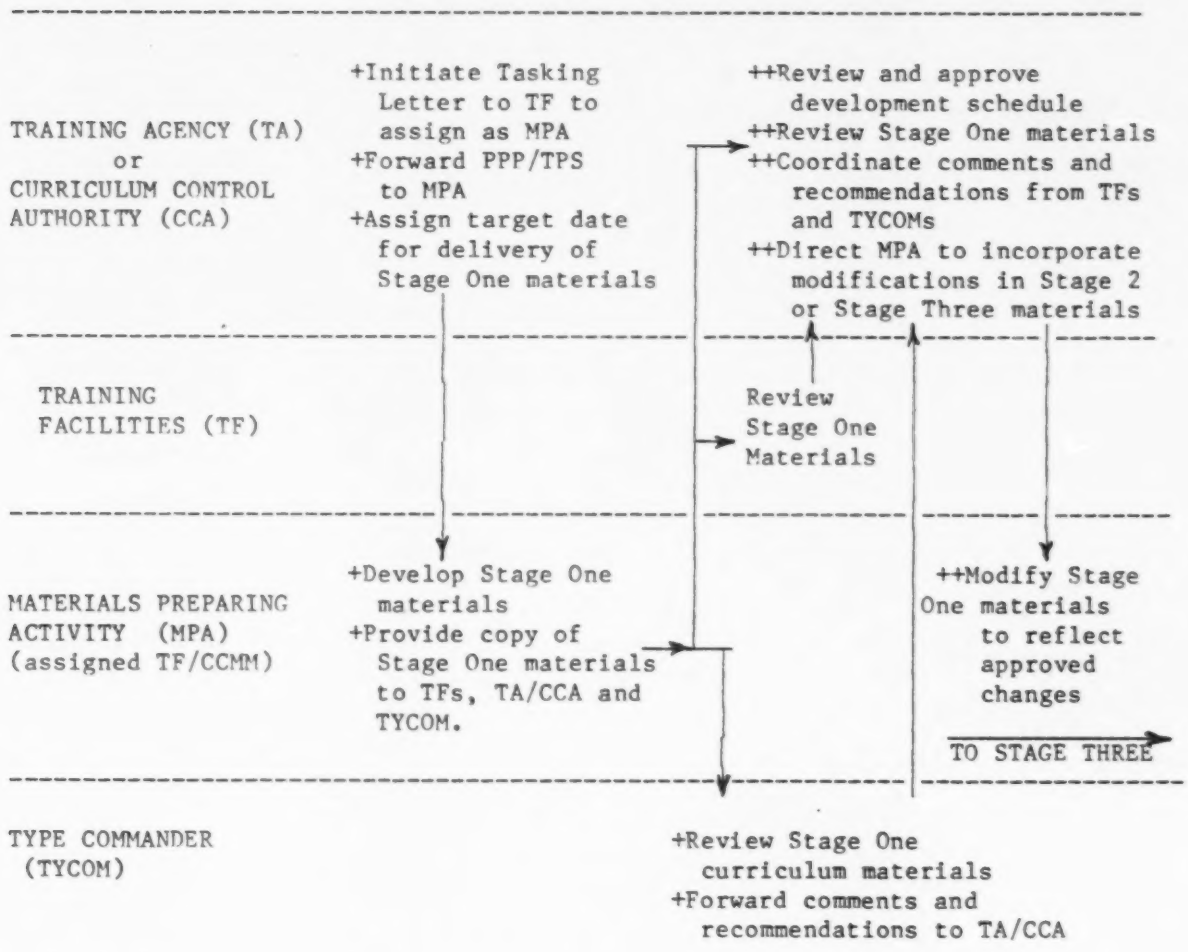
4. Preliminary PPP-Item-to-Topic Objective Assignment Chart (OAC)
A matrix format to relate each PPP line item to the Part-Section-Topic of the Instructor Guide (IG), the Topic Learning Objectives of the topic, and the individual test items which are used to evauate each topic learning objective.

5. Tests and testing procedures
A draft of the procedures to be used in trainee evaluation during the course. May include some sample knowledge test items and performance checklists.

6. Preliminary Master Material List (MML)
A draft list of all the publications, materials, equipment, tools, expendables, etc. that are required to teach the course.

7. Curriculum Materials Status and Development Schedule
A schedule to show the start and completion of each stage of curriculum development by year, month and day as it is planned by the curriculum developer.

FLOW DIAGRAM FOR CURRICULUM DEVELOPMENT - STAGE ONE


TRAINING AGENCY (TA)
or
CURRICULUM CONTROL AUTHORITY (CCA)
+Initiate Tasking Letter to TF to assign as MPA
+Forward PPP/TPS to MPA
+Assign target date for delivery of Stage One materials
++Review and approve development schedule
++Review Stage One materials
++Coordinate comments and recommendations from TFs and TYCOMs
++Direct MPA to incorporate modifications in Stage 2 or Stage Three materials
TRAINING FACILITIES (TF)
Review Stage One Materials
MATERIALS PREPARING ACTIVITY (MPA) (assigned TF/CCMM)
+Develop Stage One materials
+Provide copy of Stage One materials to TFs, TA/CCA and TYCOM.
++Modify Stage One materials to reflect approved changes
TO STAGE THREE
TYPE COMMANDER (TYCOM)
+Review Stage One curriculum materials
+Forward comments and recommendations to TA/CCA

Training Materials Development Ssystem
STAGE THREE CURRICULUM DELIVERABLES

A. INTRODUCTION. This is a summary of stage three materials to be delivered to the Training Agency and provides the references utilized to develop each item.

B. REFERENCES.
1. NAVEDTRA 38004 REV A
2. Military Standard 1379C (NAVY) with Data Item Descriptors (DID)
3. DOD Handbook 292, Part 2
4. CNTECHTRAINST 1540.38B
5. CNTECHTRAINST 1540.8C

C. INFORMATION. The stage three requirements as shown below are in their completed final draft form in preparation for course validation in stage four.

1. Instructor Guide (IG) components
   (a) Front Matter: table of contents, how to use, etc.
   (b) Parts: sections, topics, discussion-demonstration-activity pages
   (c) References: master materials list, objective assignment chart, etc.

2. Trainee Guide (TG) components
   (a) Front Matter: hazard awareness, list of effective pages, etc.
   (b) Instruction Sheets: six types for different uses

3. Instructional Media Materials (IMM)
   (a) Used to supplement and aid in learning and teaching
   (b) Six categories from audiovisual to team training

4. Testing plan components
   (a) What examinations will be given at which times during the course
   (b) Written examinations
   (c) Performance examinations and laboratory work
   (d) Testing constraints and weighting criteria for computing grades

5. Test item types and tests
   (a) Item types: True-False, Multiple-Choice, Completion, Matching, Essay
   (b) Test types: Knowledge and Performance, Within-course and End-of-Course

6. Preliminary Master Schedule
   Represents "best guess" of curriculum developer as to number of hours needed for each topic of classroom, lab and testing activities. This will be checked during the Stage Four pilot course validation activity.

TRAINEE INSTRUCTION SHEET MATRIX

1. Trainee instruction sheets are provided to assist the trainee in the study of the topic under consideration. The concepts of saving trainee time, supplementing training manuals under revision, providing guidance during class notetaking, etc. are aimed at helping the trainee learn as much as possible.

TYPE	INSTRUCTIONAL PURPOSE	ELEMENTS INCLUDE:	ADVANTAGES
Assignment "homework"	1. Simplify trainee search for relevant data needed. 2. Direct trainee efforts to complete an assignment.	Title describes content area; TLO from the IG; Study assignment with appropriate documentation; Study questions to test application of information	1. Saves trainee home study time. 2. Provides initial experience in use of reference materials.
Information "supplement"	1. Cover inadequacies in technical manuals. 2. Aid trainees comprehension of subject matter.	Title describes content area; Introduction explains purpose & benefit; References list sources used; Information is material at level understood by trainee	Provides trainee with current accurate supplementary data to update training manual material.
Problem "application practice"	1. Present trainees with practical problems to emphasize the fundamentals of logical thinking. 2. Give practice in knowledge application to problem solving.	Title describes problem content area; Format: 1. Clear statement of the problem to be solved. 2. Conditions with any parameters involved. 3. Directions and procedures for soluation.	Permits trouble-shooting problem soluation without requiring use of equipment to supplement the regular laboratory exercises.
Job "performance evaluation"	Direct trainees to utilize documentation as the basis for a step-by-step performance of a practical job in operating or maintaining equipment.	Title describes content area of job; Introduction explains purpose concisely; Equipment list; Reference materials; Job Steps:gives step-by-step procedures with self-test questions.	Provides trainees with practice in performance of a job as they will do in their ultimate job assignment.
Diagram "visualized"	Provide trainees with course material without the need to copy the chalkboard or overhead transparency material which the instructor deems important to use.	Title describes subject matter involved; Format: varies, such as: 1. Foldout schematics 2. Block diagrams 3. Illustrations	1. Saves time in the classroom. 2. Assures that trainees have accurate information to work with.
Outline "overview"	Provide trainees with outline of major teaching points of a topic.	Title identical with topic; Format: 1. Introduction,eg.TLO's 2. Outline in key words	1. Guides trainee in note-taking. 2. Provides an overview of topic

INSTRUCTIONAL MEDIA MATERIALS MATRIX

TYPE	DESCRIPTION	EQUIPMENT REQUIRED	ROOM LIGHTING	ADVANTAGES
AUDIO-VISUAL PRESENTATION CATEGORY				
1. Chalk-board or Visual-Aid Panel (VAP)	Slate / painted wood or metal to accept chalk or special VAP markers.	Chalkboard or VAP hung on the wall. May be magnetized.	Normal room lighting	1. Always ready for use during presentation. 2. Easily erased when finished with material. 3. Can be prepared prior to class and covered.
2. Trans-parency	Transparent acetate or plastic film with opaque printing on it	Overhead projector and screen	Room can remain lighted	1. Instructor faces the class. Good eye contact 2. Flexible sequencing. 3. Instructor may add to transparency during presentation.
3. Films	8mm or 16mm motion picture film	8mm or 16mm motion picture projector and screen	Room darkened	1. Shows intricate operations in a clear, simple manner. 2. Special visual effects may be used.
4. Video tapes	1/2-inch or 3/4-inch reel or cassette video tapes	Videotape player and video or TV monitor	Room can remain lighted.	1. Records skills and real life situations for playback and review. 2. Can be used for immediate feedback.
5. Slides	35mm film mounted in 2x2-inch cardboard mounts	Slide projector and screen. Audio player unit with synchronizer if required.	Room darkened	1. Inexpensive to produce and reproduce. 2. Flexible sequencing. 3. Instructor controls pace of presentation. 4. May be synced to an audio accompaniment.
6. Film-strips	35mm film in a continous strip	Filmstrip projector and screen. Audioplayer if filmstrip has sound.	Room darkened	1. Fixed sequence of presentation. 2. Economical production and reproduction 4. May be synced to an audiotape player.
7. Audio-tapes	Coated plastic ribbon on reel or in cassette	Audiotape recorder/ player	Room can remain lighted	1. Economical sound recording and playback. 2. Easily changed.

TYPE	DESCRIPTION	EQUIPMENT REQUIRED	ROOM LIGHTING	ADVANTAGES
AUDIO-VISUAL PRESENTATION CATEGORY				
8. Display presentation easel.	Easel with pad of newsprint for use with markers May be coated to accept chalk and magnetized.	A supply of markers and chalk. Magnets if magnetized.	Normal room lighting	1. Completed newsprint sheets can be displayed on the room walls. 2. No time required to erase completed sheets. 3. Can be completed prior to class & covered.
TRAINING GRAPHICS CATEGORY				
9. Charts	Printed material which gives information in tabular format	Opaque projector and screen when it is desirable to project the graphic for the entire class. Otherwise, no equipment needed.	Room completely darkened when the opaque projector is used. Room can remain lighted at other times.	1. Easy to construct. 2. Inexpensive. 3. Can be drawn on chalkboard or VAP boards when projected. 4. Easily duplicated for trainee handouts. 5. Large classroom visuals are often produced on heavy paper or cloth.
10. Graphs	Symbolic drawing showing relationship or comparisons			
11.Diagram	Printed material showing chronological changes, distribution, components and flow.			
TRAINING DEVICES CATEGORY				
12. Models	Copy of the real object: enlarged or reduced size.	Usually no equipment is required other than the device itself.	Usually the room is kept well lighted to aid in seeing the device.	1. Clearly shows relationships among objects and parts. 2. Can eliminate non-essential elements for learning. 3. Appeals to multiple senses to aid learning. 4. Interest the trainee to develop greater depth of understanding. 5. Saves instructional time.
13.Mockups	Three-diamensional specialized working model.			
14. Cut-a-way	Object which has been sectioned to reveal internal structure.			
15. Actual device	Use of item of equipment or tool.	Actual item of equipment		

TYPE	DESCRIPTION	EQUIPMENT REQUIRED	ROOM LIGHTING	ADVANTAGES
PROGRAMMED MATERIALS CATEGORY				
16. Programmed Textbook (PI)	Printed text in one of several programmed formats.	None	Normal room lighting	1. Individualized self-study permits self-pacing to meet the individual trainee's learning style & pace. 2. Immediate feedback on responses provides the trainee with knowledge of errors due to misinformation. 3. Branching capability permits both remediation and advancement within the course & saves time. 4. Use of computer disc and video disc provides rapid random acess to course data.
17. Computer-Assisted Instruct-ion (CAI)	Trainee-operated computer-controlled random-access print-based instruction.	Computer terminal with "main frame" computer or microcomputer		
18. Inter-active Video Disk (IVD)	Trainee-operated computer-controlled random-access video-based instruction	Video-disc player, interface unit, micro-computer & color monitor		
SELF-PACED MATERIALS CATEGORY				
19. Self-study workbook (SSWB)	Printed work-book with information tests, etc., for self-study by trainee	Actual item of equipment or system being studied.	Normal lighting	Permits training of one trainee without the physical presence of an instructor, eg. on-board deployed ships or for background remediation.
20. On-the-job Training Handbook (OJT)	Instructor volume for supervisor. Trainee volume to supplement manuals, etc.			Self-paced instruction held on-board to learn tasks which cannot be learned in the formal classroom situation.
21. Technical Hands-on Training System Packet	Trainee train-ing packet for self-study. Instructor guide packet.			Self-paced instruction on equipment, sub-system or system used outside of formal class-room situation.

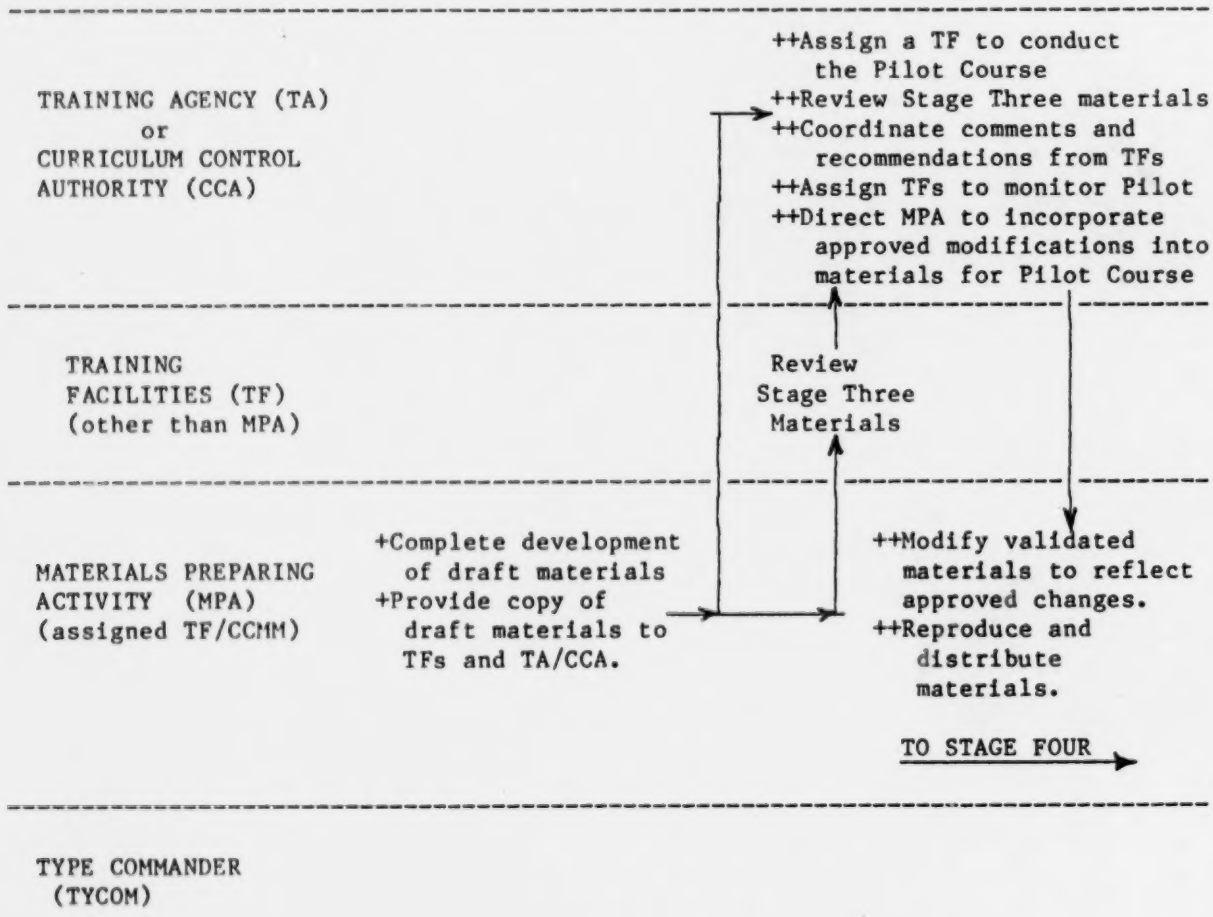
TYPE	DESCRIPTION	EQUIPMENT REQUIRED	ROOM LIGHTING	ADVANTAGES
TEAM TRAINING MATERIALS CATEGORY				
22. Exercise Controller Guide (ECG)	Printed guide for instructor to use in controlling an exercise, eg. Attack Center software.	As needed to perform the specific exercise	Appropriate to the equipment utilized.	1. Provides instructor with multiple exercises for team training. 2. Permits revision of or adding new exercises without the need to revise the IG for the
23. Instructor Utilization Handbook (IUH)	Printed guide to specific simulation equipment for instructors and training officers being used in a designated course.			1. Provides instructors with "user-friendly" guide to operation of simulation equipment needed in their course of instruction. 2. Provides students with a guide to their activities in the course.
24. Simulator Software Utilization Handbook(SSUH)	Printed guide for simulation system operators to test, evaluate, and correct deficiencies in simulator			1. Provides system operators with "user-friendly" descriptions and explanations of software construction and usage.

FIVE STAGES OF INSTRUCTIONAL MEDIA MATERIALS (IMM) DEVELOPMENT

(Reference: NAVEDTRA 38004A, Chapter 5, p. 25)

1. Listing of IMM to be developed for the course for review by CCA.
2. Cross-section of IMM to be developed. (This stage may be waived)
3. Complete development of all IMM in final draft form for review.
4. Validate IMM during "Pilot" course along with other curriculum materials.
5. Deliver master copies of IMM to the Course Curriculum Model Manager (CCMM).

FLOW DIAGRAM FOR CURRICULUM DEVELOPMENT - STAGE THREE



STAGE FOUR PILOT COURSE VALIDATION OUTLINE

NAVEDTRA 38004A
Appendix A

1. Purpose of Conducting a Pilot Course.

   a. Assure the Curriculum Control Authority that the course "will work" through the process of validation
   b. Instruct other site instructors who will return to their training facilities to teach the course
   c. Gain input from other site instructors who also serve as subject matter experts
   d. Produce teachable "red line" edition of materials so that implementation can begin before final publication

5. Conducting the Pilot Course.

   a. Internal review of materials by all those present during the pilot course
   b. Instructor responsibilities include personalization of the course outlined in the instructor guide
   c. Trainee participation is observed by the monitors to see that the materials actual meet the learning objectives
   d. Monitor activities include:

      (1) Attendance at the pre-pilot conference
      (2) Be present for all lecture/lab sessions
      (3) Comment, as appropriate, on curriculum
      (4) Attend post-pilot conference

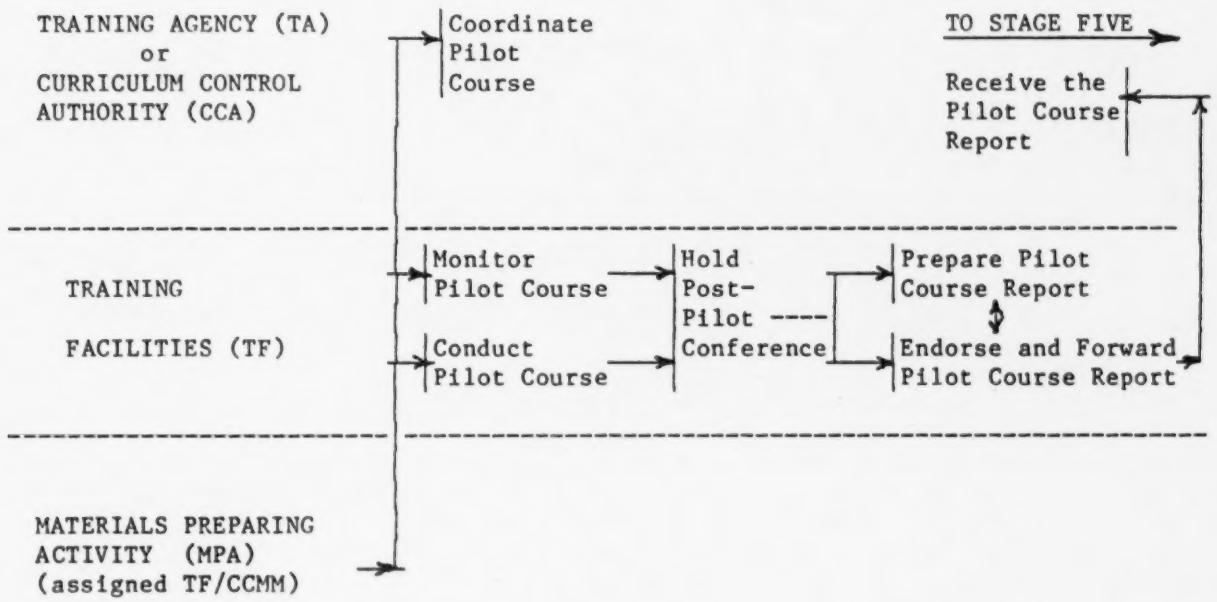
6. Pilot Course Final Report.

   a. Outline of the final report.
      (1) Administration, ie. time allocation
      (2) Curriculum Validation, ie. adequate materials
      (3) Technical Validation, ie. support of TLO
      (4) Redlined (annotated) copy of all materials
      (5) Minority report provisions.

   b. Report signed and sent to Curriculum Control Authority for approval/disapproval

   c. The Curriculum Control Authority either approves or disapproves the report as submitted

FLOW DIAGRAM FOR CURRICULUM DEVELOPMENT - STAGE FOUR



COURSE MANAGEMENT MATERIALS INFORMATION

1. There are two computer based management tools utilized by all Navy training commands for the purpose of information storage, retrieval and dissemination:

a. Catalog of Navy Training Courses (CANTRAC)

(1) A NAVEDTRA publication distributed on microfiche (Vol. II) and in hardcopy (Vols. I and III)

(2) A single alphabetic character in the first position of the Course Identification Number (CIN) identifies the command having Curriculum Control Authority, i.e., "A" = Chief of Naval Technical Training.

(3) The Course Curriculum Model Manager (CCMM) is assigned responsibility for maintaining specified courses for such items as budgeting for the distribution of curriculum materials and conducting curriculum reviews.

b. Navy Integrated Training Resources and Administration System (NITRAS)

(1) Computer reports (files) are used to manage and support courses.

(2) NITRAS contains the following files:

(a) Master Course Reference File (MCRF) which contains the course schedules, trainee statistics and class utilization data.

(b) Student Master File (SMF) which contains information on all personnel undergoing Navy training of 13 or more days.

(c) Training Summary File (TSF) which contains data on the number of trainees under Navy instruction and the "average on board" at each Navy training facility.

(d) Active Support File (ASF) which contains data on manpower authority and staff personnel assigned to each Navy training facility.

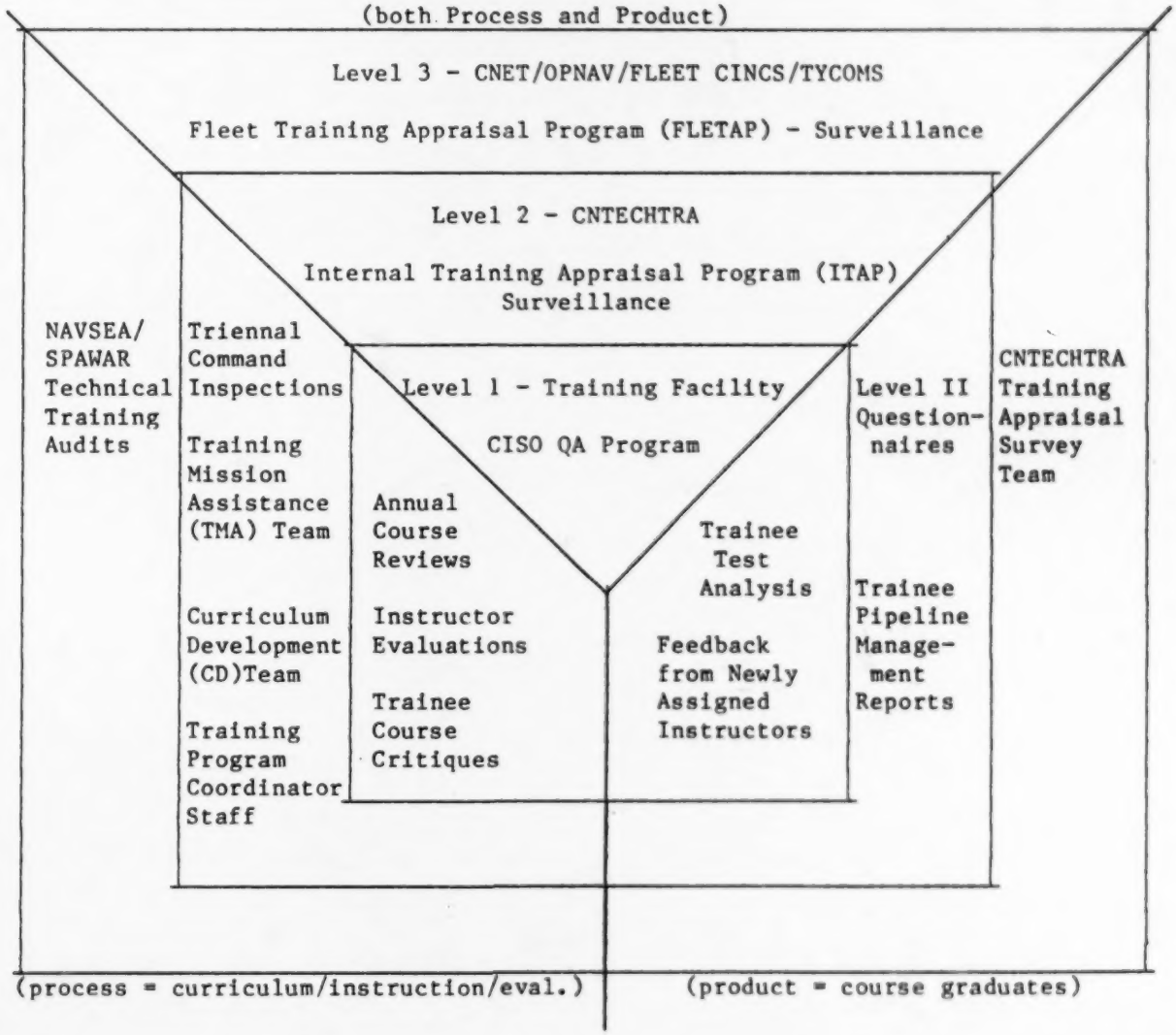
2. A third management tool is used by those Navy training facilities which utilize the NAVEDTRA 110A system of training.

a. Instructional Management Plan (IMP) which defines the procedures for administration and management of instruction. The following elements make up the IMP: Cover page, table of contents, forward, introduction, course management data, student flow management data, student flow diagram and the instructor qualification plan.

NAVY TRAINING APPRAISAL SYSTEM

1. Training commands are tasked to provide properly trained personnel to the fleet. To monitor this task the Chief of Naval Technical Training (CNTECHTRA) has established a Training Appraisal Program in order to assess the quality of training and assist in identifying and correcting any training deficiencies.

2. Navy training appraisal includes both the process of training and the product (course graduates) of training. Some parts of the program examine one of these two aspects while other parts include examination of both parts of the program. The diagram below defines three levels of appraisal and most of the specific parts of the program.


(both Process and Product)
Level 3 - CNET/OPNAV/FLEET CINCS/TYCOMS
Fleet Training Appraisal Program (FLETAP) - Surveillance
Level 2 - CNTECHTRA
Internal Training Appraisal Program (ITAP) Surveillance
Level 1 - Training Facility
CISO QA Program
NAVSEA/ SPAWAR Technical Training Audits
Triennal Command Inspections
Training Mission Assistance (TMA) Team
Curriculum Development (CD)Team
Training Program Coordinator Staff
Annual Course Reviews
Instructor Evaluations
Trainee Course Critiques
Trainee Test Analysis
Feedback from Newly Assigned Instructors
Level II Question-naires
Trainee Pipeline Manage-ment Reports
CNTECHTRA Training Appraisal Survey Team
(process = curriculum/instruction/eval.)
(product = course graduates)

CURRICULUM MODIFICATION MATRIX

Characteristics of Modifications	Three levels of curriculum modification		
	Interim Changes	Changes	Revisions
Recommended by: Initiated by:	Instructor TF CO	CCMM or TF CO CCMM CO	CCMM CO CCA
Modifications may include...	Pen & Ink notes Technical error corrections Urgent safety	TLO add/substract Change of sequence or instrl. method. Remove/insert pgs.	Change CLO,TLO &/ or course length Contents 50% +
Limitations on modifications:	No CLO, TLO or added resources No addition to course length	No CLO changes No additional resources or course length	No limitations Usually requires PILOT or other validation action
Incorporates these previous actions:	none	All interim - changes since the last change	All changes since the last revision
Alpha/Numeric Identification	Numeric: 2-1, 2-2, etc	Numeric: 1, 2, 3, etc	Alpha: A, B, C, etc.
Approval: Authority.... Format.....	TF CO specified form	CCMM CO specified form	CCA letter of promulgation
Notification & Distribution Requirements	TF reports to CCMM in 5 days CCMM reports to all TFs within 10 days	CCMM distributes modified material to teaching TFs	CCMM distributes modified material to teaching TFs

Note: Technical Changes type of modification not included in the matrix.

CURRICULUM CHANGE PACKAGE:

1. Change identification - Numeric, eg. Change 1, Change 2, etc. used in sequence until next revision, eg. REV B CH-4
2. Change notice - specified format of letter giving instructions for incorporating changes, eg. remove/replace, delete, add pages. Includes justification.
3. Change pages - all modified pages of the curriculum that have been provided to replace existing pages or to be added.
4. Change materials - IMM (slides, transparencies, etc.) that have been modified or added to the course materials (also new MML pages, as needed)

END

U.S. Dept. of Education

Office of Education
Research and
Improvement (OERI)

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Date Filmed

March 21,1991